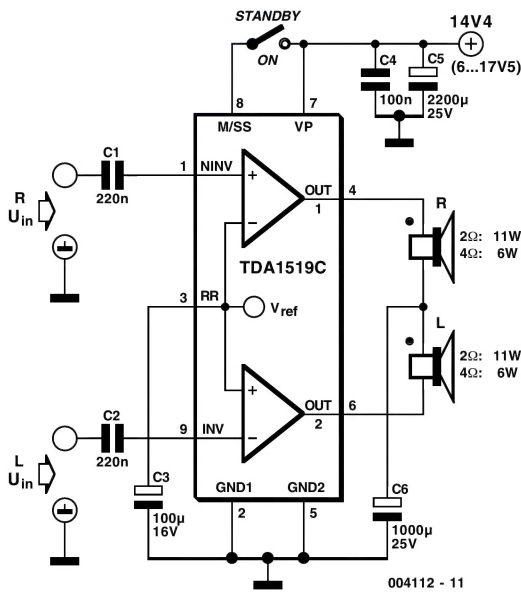
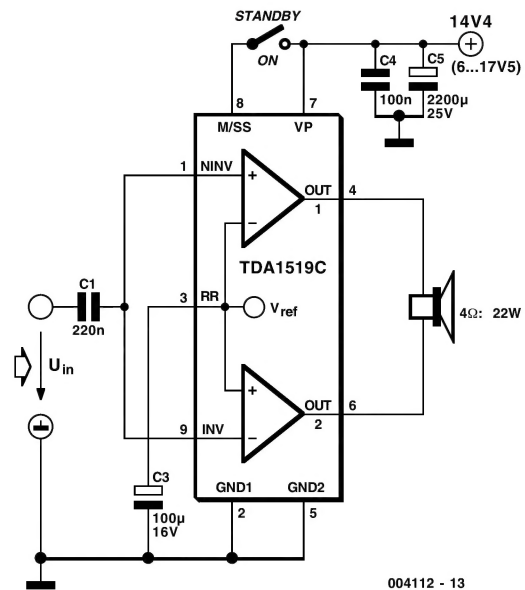


020

11 W Stereo or 22 W Mono Power Amp



004112 - 11



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G. Kleine

Integrated AF power amps have seen great improvements in recent years offering improved power and easier use. The TDA1519C from Philips contains two power amplifiers providing 11 W per channel stereo or 22 W mono when the two channels are connected in a bridge configuration. The special in-line SIL9P package outline allows the chip to be conveniently bolted to a suitable heatsink. The TDA1519CSP is the SMD version, in this case the heat sink is mounted over, and in contact with, the top surface of the chip.

The operating voltage of this device is from +6 V to +17.5 V. The two channels of the amplifier are different in that one channel, between pins 1 and 4, is a non-inverting amplifier, while the other between pins 9 and 6 is an inverting amplifier. It is therefore necessary in stereo operation, to wire the speakers so that one of them has its polarity reversed. Each amplifier has an input impedance of 60 kΩ and a voltage gain of 40 dB, i.e. 100 times. When both amplifiers are used in a bridge configuration, the inputs are in parallel so that the input impedance will be 30 kΩ.

A combined mute/standby function is provided on pin 8. In its simplest form this can be connected to the positive rail via a switch. When the switch is open the amplifier will be in standby mode and current consumption is less than 100µA. When the switch is closed, the amplifier will be operational.

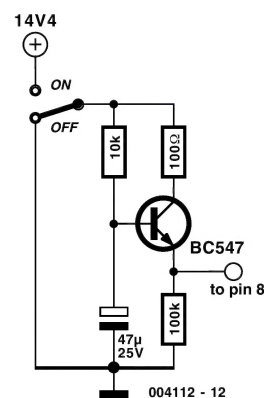
A circuit is also shown that uses the mute input to prevent the annoying switch-on pop heard when power amps are first switched on. This is caused by the rush of current to charge capacitors C1 and C2. The circuit shown generates a ramp

voltage, which is applied to pin 8. At switch on, as the voltage rises from 3.3 V to 6.4 V, the amplifier will switch out of standby mode and into mute mode allowing C1 and C2 to charge. Only when the ramp voltage on pin 8 reaches 8.5 V will the amplifier switch into active mode.

Protection built into the TDA1519C would seem to make it almost foolproof. The two outputs can be shorted to either of the supply rails and to each other. A thermal shutdown will prevent overloading and the power supply input is protected against accidental reversal of the supply leads up to 6 V.

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Internet Address: www.semiconductors.philips.com



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